

**6BA7****PENTAGRID CONVERTER**

9-PIN MINIATURE TYPE

6BA7GENERAL DATA**Electrical:**

Heater, for Unipotential Cathode:

Voltage. 6.3 ac or dc volts

Current. 0.3 amp

Direct Interelectrode Capacitances:^oGrid No.3 to All Other Electrodes
(RF Input) 9.5 μ fPlate to All Other Electrodes
(Mixer Output) 8.3 μ fGrid No.1 to All Other Electrodes
(Osc. Input) 6.7 μ fGrid No.3 to Plate 0.19 max. μ fGrid No.3 to Grid No.1 0.1 max. μ fGrid No.1 to Plate 0.05 max. μ fGrid No.1 to All Other Electrodes
Except Cathode 3.4 μ fGrid No.1 to Cathode 3.3 μ fCathode to All Other Electrodes
Except Grid No.1 4.0 μ f^o With no external shield.**Mechanical:**

Mounting Position. Any

Maximum Overall Length 2-5/8"

Maximum Seated Length. 2-3/8"

Length, Base Seat to Bulb Top (excluding tip). . . 2" \pm 3/32"

Maximum Diameter 7/8"

Bulb T-6-1/2

Base Small-Button Noval 9-Pin

Basing Designation for BOTTOM VIEW 8CT

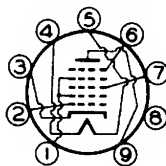
Pin 1-Grids No.2
& No.4

Pin 2-Grid No.1

Pin 3-Cathode

Pin 4-Heater

Pin 5-Heater

Pin 6-Grid No.5,
Internal
Shield

Pin 7-Grid No.3

Pin 8-Internal
Shield

Pin 9-Plate

CONVERTER SERVICE**Maximum Ratings, Design-Center Values:**

PLATE VOLTAGE. 300 max. volts

GRID-No.5 & INTERNAL-SHIELD VOLTAGE [▲] . . . 0 max. volts

GRIDS-No.2 & No.4 VOLTAGE. 100 max. volts

GRIDS-No.2 & No.4 SUPPLY VOLTAGE 300 max. volts

PLATE DISSIPATION. 2.0 max. watts

GRIDS-No.2 & No.4 DISSIPATION. 1.5 max. watts

TOTAL CATHODE CURRENT. 22 max. ma

[▲] See next page.

SEPT. 30, 1948

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RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

TENTATIVE DATA

6BA7



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GRID-No.3 VOLTAGE:

Negative bias value. 100 max. volts
Positive bias value. 0 max. volts

PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode. 90 max. volts
Heater positive with respect to cathode. 90 max. volts

Characteristics - Separate Excitation:*

Plate Voltage.	100	250	volts
Grid-No.5 & Internal Shield.	Connected directly to ground		
Grids-No.2 & No.4 (Screen) Voltage	100	100	volts
Grid-No.3 (Control Grid) Voltage	-1	-1	volt
Grid-No.1 (Oscillator Grid) Resistor	20000	20000	ohms
Plate Resistance (Approx.)	0.5	1	megohm
Conversion Transconductance	900	950	μ mhos
Conversion Transconductance (Approx.)*	3.5	3.5	μ mhos
Plate Current.	3.6	3.8	ma
Grids-No.2 & No.4 Current.	10.2	10	ma
Grid-No.1 Current.	0.35	0.35	ma
Total Cathode Current.	14.2	14.2	ma

NOTE: The transconductance between grid No.1 and grids No.2 & No.4 connected to plate (not oscillating) is approximately 8000 micromhos under the following conditions: signal applied to grid No.1 at zero bias; grids-No.2 and No.4 and plate at 100 volts; grid No.3 grounded. Under the same conditions, the plate current is 32 milliamperes and the amplification factor is 16.5.

* Internal shield (Pins No.6 and No.8) connected directly to ground.

* The characteristics shown with separate excitation correspond very closely with those obtained in a self-excited oscillator circuit operating with zero bias.

With grid-No.3 bias of -20 volts.

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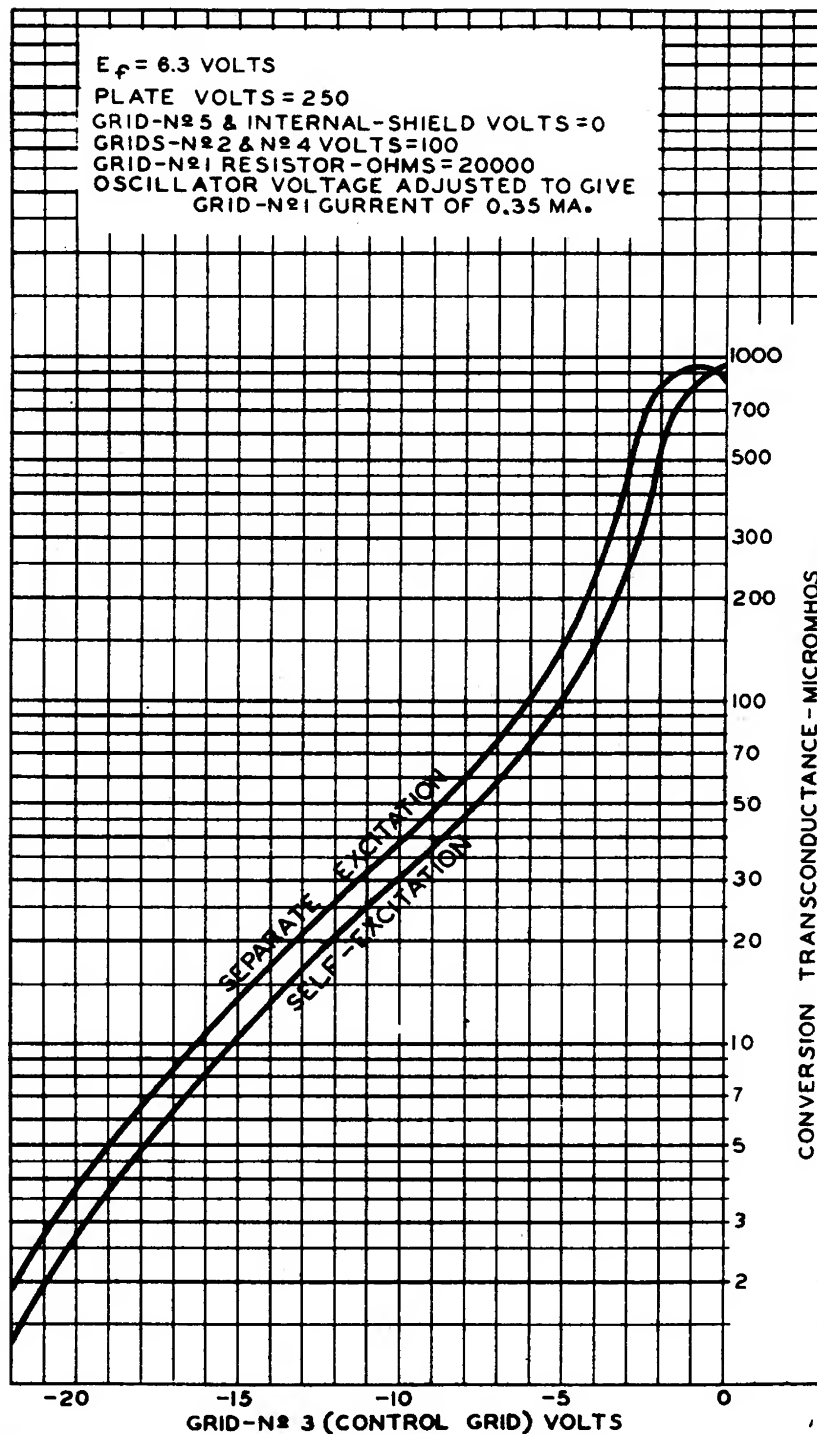
TENTATIVE DATA



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OPERATION CHARACTERISTICS



AUGUST 27, 1948

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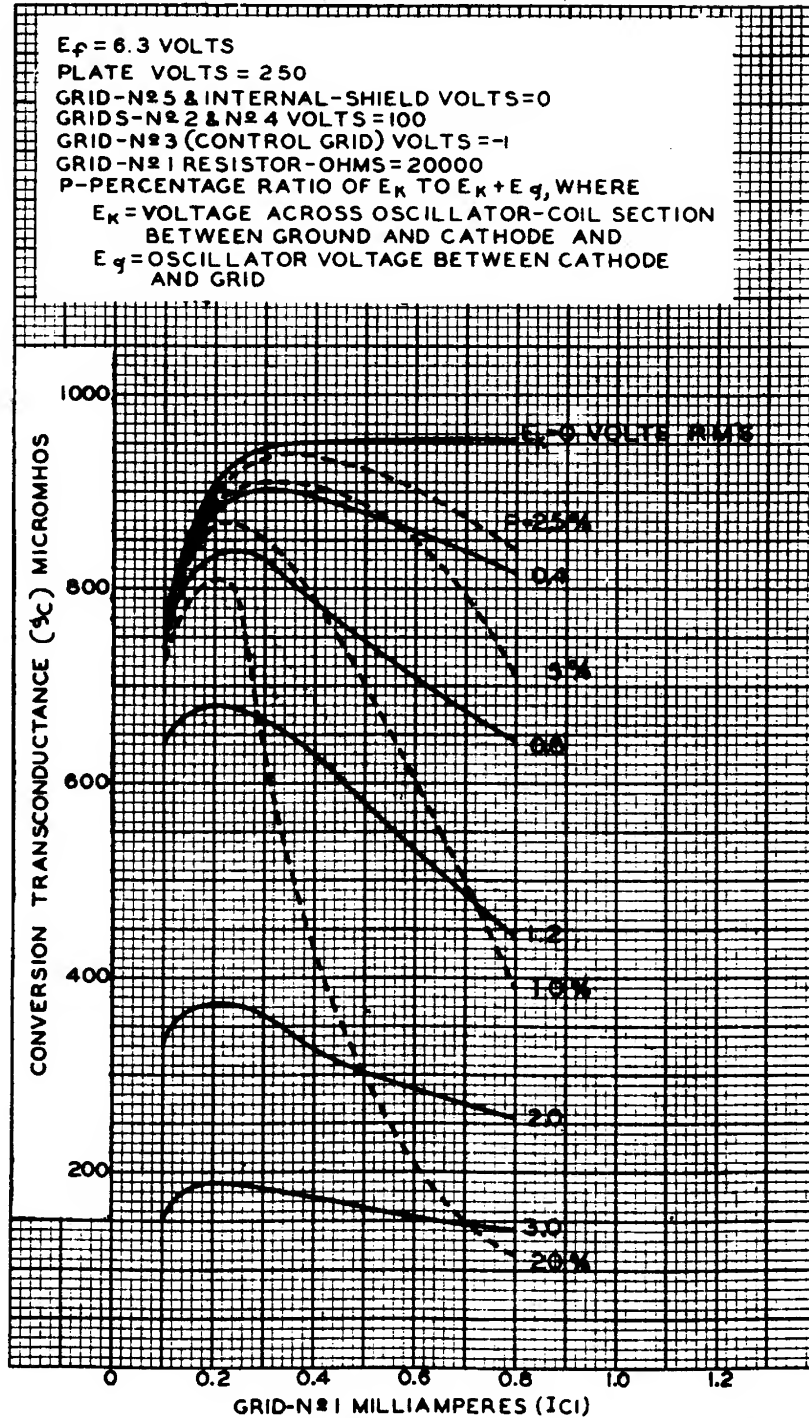
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OPERATION CHARACTERISTICS WITH SELF-EXCITATION



AUGUST 25, 1948

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92CM-6981R1

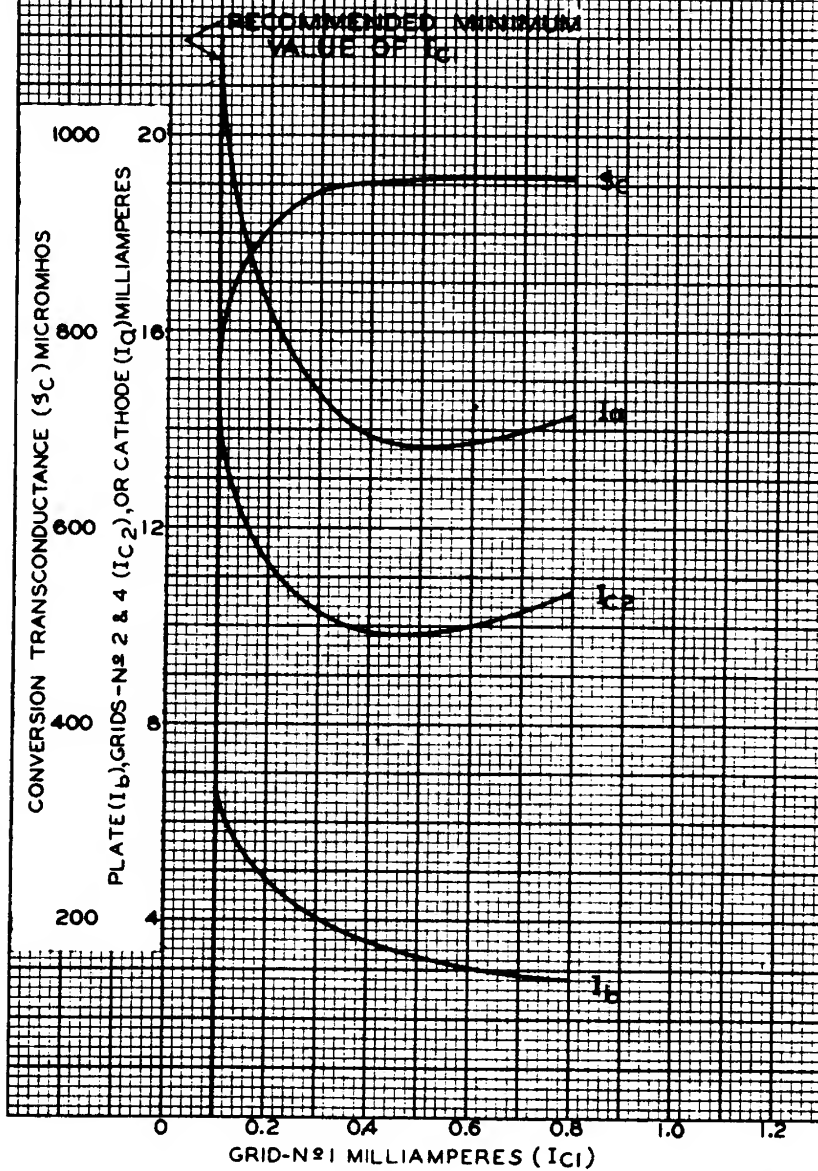


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OPERATION CHARACTERISTICS WITH SEPARATE OSCILLATOR EXCITATION

$E_f = 6.3$ VOLTS
PLATE VOLTS = 250
GRID-N ϕ 5 & INTERNAL-SHIELD VOLTS = 0
GRIDS-N ϕ 2 & N ϕ 4 VOLTS = 100
GRID-N ϕ 3 (CONTROL GRID) VOLTS = -1
GRID-N ϕ 1 RESISTOR-OHMS = 20000
GRID-N ϕ 1 CURRENT VARIED BY ADJUSTMENT
OF OSCILLATOR VOLTAGE



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92CM-6980R2